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material that can seal against the separation unit 102B or 102C well to prevent leakage. As shown, separation units 102B and 102C have channels of different lengths.

IN THE CLAIMS:

Please amend claims 1, 25 and 28 as indicated in Appendix B. The amended claims will then read as follows:

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1. A modular microchannel apparatus for the chemical analysis of an analyte in a sample, comprising:

(a) a plurality of separation units each comprised of a solid substrate having a microchannel present in the surface thereof, wherein the microchannel in each separation unit is of a different length and forms a separation column or capillary that separates the analyte from the sample according to the molecular characteristics of the analyte;

(b) a single reservoir unit in the form of a plate comprised of a reservoir that contains a liquid for introduction into each of the microchannels of the separation units in succession; and

(c) an external power source operatively connected to the reservoir unit for driving the liquid from the reservoir through the microchannels of the separation units,

wherein the reservoir unit has dimensions that enable the operative and modular coupling of the reservoir unit to each separation unit in succession to allow liquid from the reservoir to be driven, by the external power source, into the microchannel of the separation unit that is operatively and modularly coupled to the reservoir unit.

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25. A kit for making a modular microchannel apparatus for the chemical analysis of an analyte in a sample, comprising:

(a) a plurality of separation units each comprised of a solid substrate having a microchannel present in the surface thereof, wherein the microchannel in each separation unit is of a different length and forms a separation column or capillary separates the analyte from the sample according to the molecular characteristics of the analyte;

(b) a single reservoir unit in the form of a plate comprised of a reservoir that contains a liquid for introduction into each of the microchannels of the separation units in succession; and

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(c) an external power source having dimensions that enable its modular and operative connection to the reservoir unit for driving the liquid from the reservoir through the microchannels of the separation units,

wherein the reservoir unit has dimensions that enable the operative and modular coupling of the reservoir unit to each separation unit in succession and to the external power source to drive liquid from the reservoir into the microchannel of the separation unit that is operatively and modularly coupled to the reservoir unit.

28. A modular microdevice for analyte analysis, comprising:

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(a) a plurality of separation units each comprised of a solid substrate having a microchannel present in the surface thereof, wherein the microchannel in each separation unit is of a different length and forms a separation column or capillary that separates an analyte from a sample according to the molecular characteristics of the analyte;

(b) a single reservoir unit in the form of a plate comprised of a plurality of reservoirs, wherein each reservoir contains a liquid, each liquid suitable for introduction into a microchannel of a separation unit; and

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(c) an external power source operatively connected to the reservoir unit for driving liquids from the reservoir unit through the microchannels of the separation units,

wherein the reservoir unit has dimensions that enable the operative and modular coupling of the reservoir unit to each separation unit in succession to allow liquid from at least one of the plurality of reservoirs to be driven, by the external power source, into the microchannel of the separation unit that is operatively and modularly coupled to the reservoir unit.

For the Examiner's convenience, the pending claims upon entry of this amendment are listed in Appendix C.